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Archaeological
Institute of
America

GENERAL MEETING OF THE ARCHAEOLOGICAL
INSTITUTE OF AMERICA

DECEMBER 28-31, 1909

THE Archaeological Institute of America held its eleventh general meeting for the reading and discussion of papers at Johns Hopkins University, Baltimore, Tuesday, Wednesday, Thursday, and Friday, December 28, 29, 30, and 31, 1909, in conjunction with the annual meeting of the American Philological Association. Four sessions were held for the reading of papers. The abstracts which follow were, with few exceptions, furnished by the authors.

WEDNESDAY, DECEMBER 29. 9.30 A.M.

1. Professor William N. Bates, of the University of Pennsylvania, *Two Labors of Heracles on a Geometric Fibula*.

This paper will be published in full in a later number of the JOURNAL.

2. Professor Campbell Bonner, of the University of Michigan, *The Standard of Artaxerxes at Cunaxa*.

This paper offered a revision, on philological and archaeological grounds, of the interpretation commonly given to the well-known passage in the *Anabasis* (I, 10, 12), where Xenophon describes the standard of Artaxerxes:

καὶ τὸ βασιλεῖον σημεῖον ὁρᾶν ἔφασαν, αἰετόν τινα χρυσοῦν ἐπὶ πέλτῃ ἐπὶ ξύλῳ ἀνατεταμένον.

This description should be translated thus: "a kind of golden eagle on a light shield, raised aloft upon a pole." The writer held that there was no evidence, literary or monumental, independent of the statement of Xenophon, to prove that the royal standard of this period had the device of a golden eagle; whereas Xenophon's expres-

sion "a kind of eagle" betrays some uncertainty. In the Middle and Later Assyrian Empires, which strongly influenced Persian civilization, the royal standards displayed sacred emblems probably derived from the winged symbol of the god Ashur. The symbol of Ashur was modified by the Persians and adopted as the symbol of Ahuramazda, which appears on Persian sculptures closely associated with the person of the king. It was suggested that the "eagle" seen by Xenophon's informants was really some form of the symbol of Ahuramazda used as a royal ensign. Such a device, because of its form, could be easily mistaken for an eagle.

3. Mr. Thomas Jex Preston, Jr., of Princeton University, *The Bronze Gates of Canosa*.

No abstract of this paper has been received.

4. Mr. L. D. Caskey, of the Museum of Fine Arts, Boston, and Mr. B. H. Hill, of the American School of Classical Studies at Athens, *Structural Notes on the Erechtheum*. (Read by Mr. Caskey.)

This paper will be published in a later number of the JOURNAL.

5. Dr. Arthur Fairbanks, of the Museum of Fine Arts, Boston, *A New Marble in the Boston Museum of Fine Arts*. (Read by Mr. L. D. Caskey.)

The Museum of Fine Arts in Boston has recently placed on exhibition a three-sided marble relief corresponding closely to the 'Ludovisi Throne' in shape, size, and style of workmanship. The presence of the delicate scroll at the bottom indicates what is missing from the relief in Rome. On the front a winged figure holds a pair of scales (beam missing) with a small nude figure in each scale pan. On either side of this figure is a draped seated woman. On one end of the throne is a nude boy, seated and playing the lyre; on the other end (which is much narrower) is a realistic old woman, seated, holding in her hand some object which has for the most part been chiselled away. The relief will be published later.

6. Mr. Francis G. Fitzpatrick, of Harvard University, *"Byzantine" Architecture in France*.

The controversy over the propriety of applying the term *Byzantine* to the churches having domes on pendentives in the south of

France is not yet at an end. The argument for the Byzantine derivation of these buildings was first seriously advanced by Félix de Verneilh in 1851 in his *L'Architecture byzantine en France*. All the buildings which he included in this category made use of the dome on pendentives; and this, he pointed out, was the most striking single characteristic of Byzantine architecture. He believed that the style was introduced into France directly from Venice, and he furnished considerable evidence to substantiate this belief. The main argument is based on the great similarity of the domed churches of St. Front at Périgueux and St. Mark's, Venice. He maintained that St. Front, which he dated from 984, was erected in imitation of St. Mark's, which he dated from 977. After its completion St. Front, according to Verneilh, served as the type from which all the other domed churches of the south of France were derived.

Critics of Verneilh early called attention to the fact that most of these churches which he called Byzantine are at least as much Romanesque as they are Byzantine. The most radical of Verneilh's later critics maintain that the French domed churches are not Byzantine at all, but native French products without foreign elements of any kind. This view is based partly upon the difference in construction which the domes, pendentives, and supporting members of these buildings reveal as compared with Byzantine models, and partly upon recent research into the history of St. Mark's and St. Front, which has tended to retard the date of erection for both of these domed churches (*i.e.* St. Mark's, 1063; St. Front, after 1120). Writers like Brutails and Spiers practically claim for the French dome on pendentives the merit of a new invention. It differs in many constructive details from the Byzantine form; but it must be admitted that the idea is still the same—it is still a dome on pendentives, and the differences may be accounted for partly by the materials employed and partly by the habits of the masons and builders of this region in the construction of walls and vaults in stone.

The weakness in the argument for the purely French origin of these eleventh-century domes lies in its inherent improbability, when it is remembered that the dome on pendentives had been in existence in the East for at least eight centuries. Spiers's assumption that in disposing of Verneilh's theory of the derivation of Byzantine influence through St. Mark's he has thus destroyed the case for the Oriental origin of the French domes is unwarranted. It was certainly possible for Eastern influence to reach southern France by other channels, although these may now be obscure or lost to view.

Both sides to the discussion have thus far ignored the domed churches of Cyprus, such as St. Barnabas, near Salamis, and the five-domed church of cruciform plan at Peristerona, near Nicosia, buildings which, as Enlart has pointed out, are constructed in the French manner. These are apparently of great antiquity, although their dates cannot be given with precision. Enlart believes them to be considerably older than the French domed churches. If this be so, we may still regard the French buildings as Oriental in origin, and it is quite possible and perhaps probable that they reached southern France by way of the island of Cyprus.

7. Professor Albert T. Clay, of the University of Pennsylvania, *Babylonian Bookkeeping*.

More than eighteen thousand tablets and fragments belonging to the administrative department of the temple of Enlil were found during the excavations of the University of Pennsylvania at Nippur, conducted by Dr. J. P. Peters (1889-90) and Dr. J. H. Haynes (1893-96). The latter found some of the tablets in the very position in which they were left when the archive room was destroyed; some were reclining against each other like a shelf of leaning books in an ill-kept library of to-day. They were dated in the reigns of the foreign dynasty known as the Kassite, which ruled over Babylonia during the greater portion of the second millennium before Christ. While thousands of temple archives have been found elsewhere in Babylonia, of earlier as well as later periods, these tablets perhaps better than others enable us to reconstruct the ancient system of Babylonian bookkeeping.

The archives include records which deal with the administration of the temple, under which palace, city, and state affairs were conducted. They include receipts of taxes or rents from Nippur, neighboring towns, and outlying districts about the city. With this revenue commercial transactions were conducted whereby a profit was gained. These include records of loans of animals, grain, and other temple property, and a large number of inventories which show at stated times the existing state of affairs. A great many records refer to salary and other payments to the storehouse officials, as well as to a host of functionaries in connection with the temple, palace, and state affairs. On the whole, the documents show how the institution was maintained, and how carefully the administrative affairs were conducted, not unlike modern institutions of a similar character.

THURSDAY, DECEMBER 30. 9.30 A.M.

1. Mr. Martin L. Rouse, of Toronto, *Hercules and Samson*.

The writer argued that Hercules is to be identified with Samson and that knowledge of him reached the Greeks through the Tyrians.

2. Professor Howard Crosby Butler, of Princeton University, *The Roman Fortresses in the Provinces of Syria and Arabia*.

A map of Syria, including the ancient provinces of the two Syrias and part of Arabia and indicating the positions of all the fortresses hitherto discovered in these regions, shows a comparatively straight, though broken, chain of military structures along the eastern border of the explored country. The southern part of the chain, in the old province of Arabia, comprises seven fortresses quite evenly disposed in a line one hundred miles long. Three of these, Koşêr il-Hallâbât, Dêr il-Kahf, and id-Diatheh, have been measured for publication in detail by the Princeton Expeditions to Syria; two more, Kaşr il-Abyad and Sês, are represented by sketch plans in M. de Vogüé's work, *La Syrie Centrale*; the others have been briefly described by M. Dussaud and the other explorers. These larger fortresses are from 150 to 250 feet square with angle towers, square or round, and often with towers in the middle of their sides. One of them is dated early in the third century A.D., three others may be dated by inscriptions of the early part of the fourth century; but all were probably founded in the second century, soon after the formation of the province of Arabia. These forts seem to have been connected by a line of small stations and watch towers disposed at nearly equal intervals.

Between the southern part of the chain and the northern group of fortresses is a gap of 100 miles, lying in a region for the most part unexplored. No fortresses have as yet been reported from this region, and the break in the chain may be accounted for by assuming that, at this point, the chain was deflected eastward toward Palmyra and the Euphrates. But north of the break the chain is taken up again, and is carried, on a slight curve, from Selemiyeh, ancient Salaminias, to Zebed, or almost to the Euphrates. This section of the chain is about seventy miles long and comprises six forts, three of which, Kaşr Ibn Wardân, Androna, and Stabl 'Antar, have been published in detailed drawings by the Princeton Expedition. These forts are substantially like the southern forts in size and in plan; but, out of the five that are dated, four belong to the latter half of the sixth century; while the easternmost is dated in the fourth century. These military stations have been frequently

referred to as frontier fortresses; but they cannot be said definitely to have been placed upon the *limes* until the regions still farther east shall have been explored. But, granting that they were on the frontier, we should find that the *limes* in Arabia remained stationary from the second to the seventh century; for there are inscriptions which prove that these forts were occupied during all that time, while the eastern *limes* of Northern Syria, if represented by these fortresses, was much further west in the latter half of the sixth century than it had been earlier, because no early forts west of the Euphrates are known.

Besides these so-called frontier fortresses there are two other sorts of military structures in Syria and Arabia: 1, the barracks of the large towns like Androna and Salaminias in the north, and Admedera and Umm idj-Djimâl in the south; and 2, the small road-fortresses which are found along the great highways of the Roman Empire. An example of this kind of fort is found in ancient Arabia at Kaşr il-B'aik, on Trajan's road, between Bostra and Philadelphia (Ammân), and another, from northern Syria, called il-Habbât, was probably on or near the road between Chalcis and Epiphanea. Both are to be published by the Princeton Expedition.

We have then, in these fortresses, in addition to the material for the study of the military architecture of the Roman and early Byzantine empires, much material for establishing the lines of the ancient *limes* at different periods, and, in connection with the inscriptions of these fortresses, much material for historical study. Several of these fortresses have yielded imperial inscriptions mentioning the names of legates, *duces*, and other officials, and the presence of certain legions or cohorts. One of them, the fortress at Kosêr il-Hallâbât, gives us a long edict of the Emperor Anastasius which will soon be published. But years of exploration and months of study are required before this subject can be discussed with any degree of finality.

3. Professor David G. Lyon, of Harvard University, *The Harvard Excavations at Samaria*.

This paper will be published essentially as read in the *Harvard Theological Review*.

The chief object in exploring Samaria is the search for material of Hebrew origin. The first campaign, 1908, began at the end of April, and continued, with two long interruptions, till near the end of August. While a small section of a broad Hebrew enclosing wall was found just before the work closed for the season, the more

imposing discoveries were from the Roman period. They included a mutilated marble statue, perhaps of a Roman emperor, a stone altar about 13 feet long and half as wide, a great stairway rising from the altar toward the south, about 80 feet broad and containing seventeen steps. On the stairway near its foot was lying a *stèle* with a Latin inscription apparently of the second century of our era. To the west of the stairway was a great chamber, partly of masonry and partly cut in the rock, once covered with an arched roof, of which only one course of stones still remains in position. South of the stairway and only a few inches below the surface was a platform paved with stone blocks and surrounded by very massive foundations at a lower level. South of the platform were massive walls running south and others running east and west.

The campaign of 1909 began about the first of June and closed the middle of November, with Dr. G. A. Reisner in charge. The space south, southeast, and southwest of the platform has been explored. Three great buildings have been recognized, a temple erected by Herod the Great, a reconstruction of this building by the Romans, and on the rock below all the other masonry the outline of a Hebrew building, believed to be the palace of Omri and Ahab. The space occupied by the palace has not yet all been dug over.

On the lower terraces, south of the palace just mentioned, many other walls of Hebrew buildings were found. The Herodian gateway on the western side of the city was also explored. It is flanked on north and south by two large circular towers, one of which was dug out. This tower seems to be of Greek origin, restored by the Romans, and rests apparently on the site originally occupied by a Hebrew tower. An important building on the eastern side of the hill near the village was also explored to the level of the Roman floor. Several of the monolithic columns of this building were in position, most of the shaft projecting above the soil. Below the Roman level are very massive walls which seem to be of Hebrew origin.

Of smaller objects found were masses of Greek and Roman pottery, mainly fragmentary, inscribed Rhodian jar handles, fragmentary Greek, Roman, and Hebrew inscriptions, coins, chiefly Roman, and part of a cuneiform inscription.

It is expected that the work will begin anew in May, 1910.

4. Professor C. F. Ross, of Allegheny College, *Reconstruction of the Later Toga*.

The history of the toga is the history of a continuous development from the simple to the complex, from the scant Etruscan form to the

early Roman form, binding in the wearer's right arm, and eventually to the highly decorative toga of Augustus's time. When this limit of elaboration is reached, the custom is evolved of formalizing the two essential effects produced by the imperial toga, the girdle-like band across the chest and the full sweeping curve of the *sinus*. This formalizing appears first in lengthening the part of the toga falling down the back into a band so that it can pass around the body and produce these two effects, as in the so-called "aedile" statues in Rome. This band is then severed entirely from the toga and is fastened in front at the armpit or the chest. Busts showing these bands may be divided into four type forms. By the various ways in which this band passes about the body, whether under or over the right shoulder, and whether the end of the band passes over the left shoulder again or hangs over the left arm, the first three types are produced. The fourth type, with a separate band depending from the diagonal one, is produced by the attempt to show the *sinus* curve in the opposite direction. In this the end of the band is held loosely in the right hand. The bands seem to have had no special meaning. They merely produce a formal toga. Ridges and incisions on the bands in the marble in a few cases, however, may indicate that originally insignia of rank were painted or otherwise produced here.

5. Professor Harry L. Wilson, of Johns Hopkins University, *An Unpublished Epigraphical Manuscript from Spain*.

The speaker described a manuscript collection of the ancient inscriptions of Cáceres and its vicinity, made by Claudio Constanzo between 1792 and 1800. This manuscript, which was recently purchased in a second-hand book shop in Madrid, contains 143 pages written in a most careful and beautiful hand, and is not the same as the manuscript of Constanzo which was known to the editor of the second volume of the *Corpus Inscriptionum Latinarum*. The total number of inscriptions in this collection is ninety-three, of which five are unpublished. Nineteen are found among the spurious inscriptions of Spain and forty-one were not known to have been copied by Constanzo. In spite of the author's stupidity and ignorance, the collection will add something to our knowledge of the inscriptions of Cáceres and the neighboring region. Fuller publication of the manuscript will be made at a later time.

6. Professor F. B. Tarbell, of the University of Chicago, *Architecture on Attic Vases*.

The representations of buildings on Attic vases teach us nothing regarding Greek architecture. The discrepancies between these representations and the contemporary buildings known from existing remains are probably due to bad drawing.

7. Dr. R. V. D. Magoffin, of Johns Hopkins University, *The Alban Villa of Domitian*.

This paper presented briefly the results of the work done during the summer of 1909 in the Barberini gardens and on the property of the Riformati monastery, on the Roman remains which are commonly called the Villa of Domitian. The investigation showed that the villa was not so large as has been supposed, that it is a four-terraced villa, some 600 m. in length, extending from the top of the ridge along the Alban Lake down toward the Appian Way. The villa seems to be an enlargement from an earlier two-terraced villa, which may be the republican villa of Clodius or of Pompey the Great. The villa did not connect with the other great imperial buildings which were built where the town of Albano now stands, as has been said, nor were there terraces down the slope toward the Alban Lake, although there seems to be a small square terrace on the top of the ridge overlooking the lake, which was connected with the villa proper, probably by an arched passage over the ridge road, which is certainly an ancient road. Further suggestions are made concerning the complexes of buildings and the purpose of several corridors and arches. The paper will not be published until a plan and perhaps a restoration can be offered with it.

8. Professor Walter Dennison, of the University of Michigan, *A Byzantine Treasure from Egypt in the Possession of Charles L. Freer*.

Early in the year 1909 a collection of thirteen pieces belonging to an exceptionally rich Byzantine treasure came into the hands of a well-known antiquary of Cairo. Later, nine of these pieces were purchased by Mr. Charles L. Freer of Detroit, namely, two armlets, two earrings, one large and three small medallions, all of gold, and a small statuette of rock-crystal. The other four pieces, which are in Europe, are two bracelets, a necklace, and one large medallion. According to the account of the Arab who sold the treasure to the antiquary, all the objects were found at a small village called Tomet near Assiût in Upper Egypt. Of the large medallions one, set in a gold frame and now in the possession of Mr. Freer, is a medallion of Theodosius, which bears on the obverse a bust of the emperor facing

to the right with the legend, DNTHEODO SIVSPFAVG and on the reverse Theodosius holding the *labarum* with his left hand, and with his right raising a kneeling female figure wearing the turreted crown; the legend is RESTITVTORREI PVBLICAE. The diameter of the whole is about $10\frac{3}{4}$ cm., of the imperial medallion about $4\frac{3}{4}$ cm. The other medallion, likewise set in a beautiful frame, bears no inscription which would determine its date; it has on the obverse the scene of the annunciation and on the reverse a representation of the miracle at the marriage in Cana, with the legend, +ΠΡΩΤΑCYMI WN+ ("First of the signs").

The small medallions are about 4 cm. in diameter and consist of gold coins enclosed in gold frames. Two of the coins are of Justinian, the third of Justinus. An interesting feature of each of these small medallions is an inscription in Greek that runs around the frame near the outer edge. On one this inscription repeats the first half of Psalms 91, 11; on another it completes the verse. Thus, on the first we read, +ΟΤΙΤΟΙCΑΓΓΕΧΟΙCΑΥΤΟΥΕΝΤΕΛΕΙΤΑΙ ΠΕΡΙCΟΥ (ὅτι τοῖς ἀγγέλοις αὐτοῦ ἐντελείται περὶ σοῦ.); on the other, +ΤΟΥΔΙΦΥΛΑΞΑΙCΕΕΝΤΑCΑΙCΤΑΙCΟΔΟΙCΟΥ (τοῦ διφυλάξαι σε ἐν πάσαις ταῖς ὁδοῖς σου). On one side of each medallion two rings appear for a hinge or clasp, and three similar rings on the opposite side. The third small medallion bears the inscription, +ΕΜΜΑΝΟΥΗΛΟΜΕΘΕΡΜΕΝΕΥΟΜΕΝΟΝΟΘΕ ΜΕΘΗΜΩ, a quotation from Matth. 1, 23, Ἐμμανουὴλ ὃ ἐστὶν μεθερμηνεύμενον μεθ' ἡμῶν ὁ θεός. The quotation on the medallion is, therefore, abbreviated, and the order of expression in the last four words is reversed. Moreover, while the spacing at the beginning of the inscription is quite generous, toward the end the letters are somewhat cramped and smaller. From the medallion hang three pendant chains (10 cm. long) ending in pearls.

The clasp of the two fine armlets is concealed by a boss and two shell-shaped ornaments. The two earrings are 11 cm. long, and consist each of three long pendants of gold decorated with crystals, pearls, and emeralds. The necklace is made of eleven small plates of gold *à jour* skilfully hinged together and profusely ornamented with pearls and precious stones. Twenty-nine pearls are still in place. There are settings for sixty-one precious stones, but several have fallen out. Hanging from the lower edge of the necklace were seventeen pendants terminating in large sapphires surmounted with pearls. Four of the sapphires are now missing.

The rock-crystal statuette is about $9\frac{1}{2}$ cm. high including the base ($1\frac{1}{4}$ cm.) of gilded silver in which the statuette is fastened. The

head and the shoulders, which are slightly stooping, are turned a little to the right. The right hand holds a round object, possibly a bowl, the left arm hangs straight down by the body; the feet are planted closely together. The pose is rather stiff. The figure seems to represent a woman, and since the features are strongly individualized, this is perhaps a portrait. The tunic is girt high, while the outer garment falls below the right arm and over the left forearm. A curious boring (about $\frac{3}{4}$ cm. in diameter) was made nearly through the crystal from the front low down between the feet.

9. Dr. D. Brainerd Spooner, Superintendent, Archaeological Survey, Northwest Frontier, India, *Discovery of the Lost Stūpa of Kaṇishka and Relics of Gautama Buddha*. (Read by Professor H. R. Fairclough, of Leland Stanford University.)

The paper, illustrated by twenty-three lantern slides, gave an account of the official examination of two large mounds lying in the fields east of Peshawar and known locally as Shah-ji-ki-Dheri. Here, some years ago, M. Foucher had suggested that one should look for the site of the great monument — pagoda and monastery — which the Chinese Pilgrims tell us was erected by King Kaṇishka the Kushāṇa near his capital city of Purushapura. The pagoda is described as at once the loftiest and the most magnificent in ancient India, having been built to enshrine relics of Gautama Buddha. The monastery is said to have been the seat of some of the most learned doctors of the early church, where many of the sacred books had been composed. Yüan Chwang visited the monastery in the seventh century, but no reference to it is found later than the sixteenth century.

The excavations were begun in the winter of 1907-08. The results of the first season's work were disappointing, but those of the second unusually rich, the ground plan of the whole stūpa being finally revealed. The central portion of the platform is a square, with massive round towers at each corner and an extensive projection running out on all four sides. No similar plan is known in any other monument of the period, and the total diameter of 286 feet greatly exceeds that of any other stūpa of that age.

Assuming that, as usual, the relic-chamber would be in the exact centre, the diagonal was drawn and a huge pit outlined midway between the corners and then slowly taken down. The work was most arduous, owing to the solid nature of the material passed through, really the inner core of the dome, or rather the débris of the same. But at last, after passing what had seemed at first to be

virgin soil beneath the monument, the relic-chamber was found. The copper casket was still upright and in its original position. It was not, however, quite intact, as two of the three figures originally supported by the lid, the two Bodhisattvas, had been broken off, together with the halo of the seated Buddha figure. But these pieces were all recovered in close proximity to the casket. The bottom of the casket was loose, though still in position, and lying on it was disclosed the inner reliquary, with its original sealing beside it, bearing the device of an elephant. The reliquary itself is of clear rock-crystal, measuring $2\frac{1}{2}$ by $1\frac{1}{2}$ inches. It is six-sided and slightly barrel-shaped, with one end hollowed out for about one-half the length of the whole. It was within this cavity that the relics were found, in whose honor the whole mighty monument had been erected. They consist only of three tiny fragments of charred bone, the largest not much bigger than a small marble. It is safe to assume that Kanishka must have believed these relics authentic, or he would not have erected in their honor the mightiest and most magnificent of the monuments of his time.

From the base to the edge of the slightly curved lid the casket measures 4 inches, with a total height of $7\frac{1}{4}$ inches to the top of the seated Buddha figure, while in form it is cylindrical with a diameter of 5 inches. The lid itself is decorated with lotus petals faintly traced, so that the whole represents a full-blown flower, on which the two standing Bodhisattvas and the seated Buddha figure rest, although the latter is really seated on a smaller lotus flower which rises on a slight stem from the centre of the former. Below the edge of this lid, along the lip which fitted over the top of the casket, is a very graceful frieze of flying geese in low relief, carrying garlands in their beaks, while the main body of the casket is decorated with a more elaborate frieze of seated Buddha figures upheld, as it were, by a long, undulating garland borne by little Erotes in a variety of animated attitudes. The centre of this frieze is occupied by a large standing figure of the king himself with two attendants. The design is admirable, but the execution is hardly equal to it. It is certainly not a product of the *Blütezeit* of Gandhāra art, and is therefore of added interest and value, as it tends to disprove the theory that this school reached its highest glory under the Great Kushāna.

But the figured devices on the casket are of no greater interest than the inscriptions. These are very faintly traced in the dotted or punctured form of cursive Kharoshthi, which is one of the most puzzling scripts of ancient India, and the only one read from right

to left. The most interesting of the three inscriptions hitherto deciphered is the one in the spaces below this frieze. This I read as *Dasa Agisala Navakarmi Kanashkasa Vihare Mahasenasa Sangharame*, and would translate as the signature, so to speak, of "the slave Agisalaos, the superintendent of works at Kanishka's Vihāra in the Sangharāma of Mahāsenā." Unfortunately, nothing further is known of Agisalaos or of Mahāsenā. The former was doubtless a Bactrian Greek in Kanishka's service, which gives us epigraphical evidence of the Greek influence in the Gandhāra School, so eloquently attested otherwise by the sculptures themselves.

The artistic remains thus far recovered are few and inferior, though by no means unimportant, and it would be strange indeed if further exploration were not to yield material of great value for the history both of art and of architecture in Gandhāra.

10. Dr. Oliver S. Tonks, of Princeton University, *Experiments with the Mycenaean Glaze*.

This paper will be published in full in a later number of the JOURNAL.

THURSDAY, DECEMBER 30. 2 P.M.

Joint Session of the Institute and the Philological Association.

The following archaeological papers were presented :

1. Mr. W. B. Dinsmoor, of the American School of Classical Studies at Athens, and Mr. Henry D. Wood, of Philadelphia, *Structural Notes on the Propylaea*. (Read by Mr. Wood.)

This paper will be published in a later number of the JOURNAL.

2. Dr. William Hayes Ward, of New York, *The Representation of Babylonian Gods in Art*.

This paper showed on the screen the succession of deities as worshipped in Babylonia, Assyria, and in the Hittite kingdom and in Persia from about 4000 B.C. to about 600 B.C. Nothing is earlier than the representation of one beardless deity, or two facing each other, drinking through a tube from an amphora. Then we have several forms of the Babylonian sun-god. One early type shows him with rays, fighting an enemy and pushing him against a mountain. He represents the sun's heat as it drives away the clouds on the eastern mountains, and corresponds to the later Nergal, god of

the summer heat and pestilence. Another early form is of the sun-god coming out of the gates of the morning and stepping on a mountain. He may have rays or streams about him, and carries a notched sword, apparently armed with flint flakes. Another early form of the sun-god Shamash represents him seated, with either rays from his body or streams, as he was regarded as the giver both of light and water. When three large dots are behind this god he represents the moon-god Sin, or Thirty.

A very early representation is that of a god in a four-wheeled chariot, with a whip, driving a harnessed "dragon," between whose wings stands a naked goddess with a thunderbolt. These may represent Bel and Belit; but the fight between Bel and the Dragon is rare in Babylonian art, although very frequent in the later Assyrian art, where for the conventional dragon may be substituted any composite or naturalistic creature, until in the Persian art it becomes almost the only representation of a deity fighting one or two lions.

Of the goddesses the earliest seems to be Bau, afterwards identified with Gula. She is seated, with hair either falling in a long tress or looped behind, and has no weapon or emblem, except that at times she is attended by the goose. Sometimes she seems to be the goddess of fertility, and stalks of grain rise from her body. When a similar seated goddess carries a naked child, it probably represents the thought that the worshipper was nursed by the goddess, as this is occasionally claimed by kings, and we have no Babylonian mother and child such as the Egyptian Isis and Horus. The other frequent goddess is Ishtar, either seated, in the older art, and with alternate clubs and scimitars rising from her shoulders, or standing, accompanied by a lion, in front view, with quivers of arrows from each shoulder, and lifting the double serpent caduceus.

Very frequent in the very early art and that which immediately follows it is Gilgamesh, with his associate Eabani, fighting a lion, a bison, a buffalo, or a stag or oryx. The artists delighted to discover various ways of exhibiting his prowess.

In the middle Babylonian period, from 2500 to 1000 B.C., there emerge several new forms of deities which were derived from the West, where the Syro-Hittite civilization prevailed. In that region we know three preëminent Hittite gods, one a dignified superior god, well clothed and usually with no weapon, who perhaps was Tarkhu, the biblical Terah, father of Abraham. With him was a nude goddess, later represented as partly clothed and with a dove, corresponding to Aphrodite. She was probably the wife of Tarkhu. The third was the Hittite Teshub, and was probably their son. He is repre-

sented as wearing a very short garment, a peaked helmet, and loaded with weapons. He leads a bull and stands on mountains. He is the god of lightning, represented by his weapons, and thunder, represented by the bellowing bull, and of mountains and war. He was introduced to the Babylonians under the Syrian name of Adad (Hadad, Addu) and with the same attributes, except that he carried a thunderbolt, not known to Hittite art. The early worship of Yahve by the Hebrews was probably related to this god. The superior Hittite god Tarkhu was differentiated into two Babylonian gods, of whom one was Marduk and the other Martu, both of whom in art much resemble him. Marduk is known by his scimitar held downward by his side, while Martu simply lifts a short sceptre to his breast. The naked Hittite goddess appears in Babylonian art as the nude Zirbanit, wife of Marduk.

The Assyrian deities varied somewhat in their representation from the Babylonian. We find Ea, god of the waters, sometimes following a Babylonian convention, which represents the god as holding a vase from which streams of water gush and fall to the ground, perhaps to be taken up by other vases, while beside him are the goat-fish and the man-fish; at other times the god is seated over a goat-fish. Adad is represented over a bull, and Ishtar over a lion, and each enveloped in rays ending with stars. Extremely frequent is the representation of what is called the sacred tree, but which is rather the tree of life. The accompanying divine figure, with a cone and a pail, is not to be considered, as usually supposed, to be fertilizing the pistillate flowers of the palm with the staminate flowers, but as plucking off the fruit, representing long life and other blessings, to present to the worshipper. In some cases the breaking off of the fruit is clearly represented.

3. Dr. Edgar L. Hewett, of the School of American Archaeology, *The Excavations of the School of American Archaeology in 1909*.

The paper was intended to give a picture of the life of one of the ancient races of America, formerly occupying the southwestern part of the United States, as disclosed by the excavation of a number of their buried towns. Views were shown of the cliff towns of Kit Sil (Keet Seel) and Betatakin, discovered by the expedition during the past summer and now for the first time made known to the scientific world. These were cliff towns, consisting of stone buildings, several stories high, and found in such a good state of preservation that the floors, ceilings, and roofs were still in place and perfectly preserved.

Next were shown the ruins on Pajarito plateau, near Santa Fé, New Mexico, where excavations have been in progress for three seasons past. These buildings were once from one to four stories high, built against the vertical walls of the cliffs, back of which were chambers excavated in the rocks, which were used for living rooms and in some cases for the burial of the dead. Other villages of similar character were built on higher ledges. On the tops of the mesas were the ruins of enormous community houses, which were shown in the process of excavation. One of these, known as the Puye, consisted of four great buildings, forming a quadrangle about 300 feet square. The excavation of the "South House" of the quadrangle disclosed a ground plan of 200 rooms. It was predicted that the excavations of the four sides would reveal about 800 rooms on the first floor, and as the building was of three or four stories, the original number of rooms was estimated to have been about 1500. Other ruins in El Rito de los Frijoles near Santa Fé were shown in the process of excavation. Of especial interest were the subterranean sanctuaries, several pictures of which were shown. These had been the places of council and of religious ceremonies, the place where the priests retired for silent thought and the head men gathered to seek wisdom from Mother Earth, from which all men came, the symbol of this being the pit near the altar, known as the *sipapu*.

The methods of disposing of the dead in crypts and cemeteries was also shown, and it had been found that the bodies had been invariably folded at burial in the "embryonic position," being the same in which the child is born. The bodies were wrapped in cotton cloth and burial robes of beaver and otter fur. It was shown that this mode of burial had prevailed in ancient times widely over the American continent as well as in Egypt and parts of Asia. The relationship of the ancient cliff peoples to the modern tribes was established on anatomical, traditionary, and cultural proof.

Evidences of the great age of these ruins were shown in the trails deeply worn in the rocks. From six to ten centuries was assigned as the time that had elapsed since the abandonment of these ancient cities, the cause of extinction being the drying up of the springs and streams. Evidences of this were found in the physiographic condition of the country, the legends of the Pueblo Indians, and the symbolism of the decorations on the pottery found in the ruins, which usually depict some emblem of the god, Awanyu, preserver of the waters.

It was shown how, in the excavations now going on, every effort

was being made to preserve the ruins from deterioration, to restore certain details so as to make them known and accessible to the travelling public. Views of the interior of rooms were shown with the articles of domestic use restored to their original places. The paper closed with a view designed to give a correct picture of the ancient town of Puye, the terraced houses clinging to the cliff walls, the ladders, stairways, and trails in place, and the whole crowned by the great community house on the mesa top, all as it probably existed a thousand years ago.

FRIDAY, DECEMBER 31. 9.30 A.M.

1. Dr. Harold R. Hastings, of the University of Wisconsin, *Identification of the Persons represented upon the Attic Grave Reliefs.*

This paper will be published in a later number of the JOURNAL.

2. Professor William H. Goodyear, of the Brooklyn Institute of Arts and Sciences, *Recently Published Measurements relative to the Leaning Tower of Pisa and the Pisa Cathedral.*

This paper will be published in a later number of the JOURNAL.

3. Professor James R. Wheeler, of Columbia University, *Notes on a Scyphus in Boston.*

The subject of discussion was the identity in the design on the front of a Corinthian scyphus in the Museum of Fine Arts with that on a scyphus from Samos, published by Boehlau, *Aus ion. u. ital. Nekropolen*, Pl. IV, 1. The two vases are also practically of the same size and technique, and differ only in the design on the back, which on the Boston vase would be considered Corinthian (the common type of Corinthian panther), on the Samian vase Ionic (lions of Ionic type). Thus the vases appear to be modelled on the same pattern. The vase from Samos seems to be quite as Ionic as it is Corinthian, and it may be questioned whether the Boston vase, the provenience of which is uncertain, is rightly put in the latter class. The so-called Corinthian panthers are not exclusively Corinthian, and on a Chalcidian vase (Furtwängler u. Reichhold, *Gr. Vasenmalerei*, Pl. 31) they may be seen in juxtaposition with lions of Ionic type.

4. Professor Lewis B. Paton, of Hartford Theological Seminary, *Some Phoenician Sarcophagi*.

No abstract of this paper has been received.

5. Professor Charles Knapp, of Barnard College, *The Side Entrances to the Stage of the Roman Theatre*.

The author pointed out that the discussions of this subject both in the manuals and in the various editions of Plautus and Terence have been curiously inadequate. Some writers leave the matter untouched, some confound the Greek and the Roman practice; others content themselves with a categorical statement unaccompanied by evidence, even that of Plautus and Terence; if passages in Plautus and Terence or Vitruvius are referred to, they are not adequately discussed.

The author then pointed out that Vitruvius V, 6, 8 clearly shows that the side entrances to the stage in the Roman theatre had, sometimes at least, each its own significance; Vitruvius does not, however, tell us which entrance led *a foro*, which led *a peregre*. For light on that problem we must go elsewhere, to Plautus, *Amphitruo*, 333, *Menaechmi*, 551-558, and to Terence, *Andria*, 720 ff., especially 732 ff. These passages were considered carefully, in great detail, and the conclusion was reached that for these three plays, at least, the side entrance to the stage lying to the *left* of the spectators led *a peregre*, that to the *right* of the spectators led *a foro*. It was then pointed out that in other plays the matter is not so simple. Thus in the *Rudens* the side entrance to the right of the spectators led from a lonely stretch of the shore to the left (west) of Cyrene, the side entrance to the left of the spectators led from Cyrene itself or at least from the harbor of Cyrene. It was noted, further, that in the *Heautontimorumenos*, which is laid in the suburbs of Athens, the characters always enter from a house except in two scenes; there the characters enter from the direction of Athens, but their own words or something in the play itself makes the direction from which they come perfectly clear. It was suggested further that sometimes at least actors going *rus* or coming *rure* used the *angiportum*; the *angiportum* could also be used as a roundabout way of reaching the forum from the stage.

The results reached for the *Amphitruo*, the *Menaechmi*, and the *Andria* are, so far as they relate to motion from the harbor or from the forum, identical with the views to be found in the books. There is this difference, however: others seem to have taken a traditional view without examination, and to have assumed that the rule applied

to all plays. The author has examined or will examine all available evidence and has shown clearly that no single conventional rule can be applied to all plays. He has shown further that for the statements ordinarily made about movement to and from the country (*rus*) there is no evidence in Vitruvius, none in Terence, and little in Plautus and that little uncertain.

Finally the author examined with care a paper by Albert Müller in *Philologus*, LIX (1900), entitled "Scenisches zu Römischen Komödien" (I. Rechts und links, pp. 9-15) and showed clearly that Müller is entirely wrong. So, too, he pointed out, were Dörpfeld-Reich, *Das griechische Theater*, p. 256, whose views Müller rightly rejects, though he seeks fruitlessly to improve upon them.

6. Mr. Thomas Spencer Jerome, of Capri, Italy, *A Note on the Esoteric Doctrines of the Eleusinian Mysteries*. (Read by Professor Martin L. D'Ooge, of the University of Michigan.)

The esoteric and fundamental doctrines of the Eleusinian mysteries must in some way have been woven into the countless speculative theories regarding the nature of life and man's relation to the universe propounded by generations of Greek philosophers. Maury and Creuzer at any rate hold this opinion. The philosophers would naturally avoid making any direct allusion to the teachings of these Mysteries, while appropriating them and working them over into their own systems. The Demeter-Persephone myth is, doubtless, the corn myth. Where can we find philosophic doctrines which conform to and fit into the ideas suggested by this myth? Certainly not in the teachings of Epicurus, nor of the Stoics, nor of Pyrrho and the other Sceptics. But we do find in the doctrine of Metempsychosis, associated with the name of Pythagoras and later developed by Plato, a decided kinship with the underlying idea of the corn myth. Plutarch (*de Is. et Os.* I), Diodorus (I, 96), and Synesius (*Enc. Calv.* 7) appear to indicate that the doctrine of Metempsychosis was the gist of the teaching of the Mysteries. Pythagoras was an ardent believer in the Demeter cult, his house at Metapontum being called the Temple of Demeter; and Proclus (*Comm. Plato's Pol.* I) says that Plato derived many of his dogmas from the Mysteries, referring especially to the fate of pure and impure souls. Mr. Jerome suggests that the esoteric doctrines of the Eleusinian Mysteries taught the neophyte the belief that his soul is in a course of development, and that after his body has been laid in the ground

his soul springs again into a new life, and that the kind of soul one sows at death determines the harvest one reaps in the next stage of existence, and so on in rhythmic cycles of death and rebirth; until at last the soul, when purified, becomes absorbed in the divine, which is God.

7. Dr. Kendall K. Smith, of Harvard University, *Unpublished Inscriptions from Corinth*.

This paper will be published in a later number of the JOURNAL.

8. Mr. Clarence Ward, of Rutgers College, *Some Problems in Mediaeval Vaulting*.

The vault problems considered in this paper were those which confronted the mediaeval builder when he was required to vault the apse and ambulatory of his churches, these being more complex in plan than the nave, aisles, or transept.

For the apse, the Romanesque builders employed the simple half-dome of semicircular or pointed section, whose masonry lay in horizontal courses resting directly upon the apse walls. Salient, pilaster-like strips resembling ribs but strengthening rather than supporting the vault occur in some places (*e.g.* Avignon, N. D. des Doms; Boscherville, S. Georges). So long as the half-dome rested directly upon an outer wall in which windows could be cut, it was a practical and easily constructed vault. With the introduction of the ambulatory, the lighting problem became a difficult one; and with the retention of the half-dome, two methods only were possible, and neither solved the problem. The first was to admit the light under the ambulatory arches, placing the vault directly upon these (*e.g.* Cunault, Abbey Church). The second was to build a wall pierced with windows above the arches and under the half-dome (*e.g.* S. Savin, Church). The first method gave insufficient light, the second rendered difficult the support of the vault. The problem was eventually solved by the invention of the Gothic *chevet* which came with the introduction of rib construction. A series of radiating and wall ribs now supported the apse vault, but were independent of its panels, whose masonry now ran in courses at right angles to the outer walls, resting upon the ribs and forming a series of cells into which rose the heads of tall windows. Three great advantages were gained, lighter and more easily constructed vaults, concentrated pressures, easily met, and falling as low as the uniform

pressure of the half-dome, and spaces for large windows which could rise even to the vault-crown, thus supplying ample light. The position of the keystone varied in these vaults, making them differ somewhat in construction and appearance. A later development of the *chevet* consisted largely in an increase in the number of ribs employed, these often being added with little or no reference to the actual support of the vault but rather as decorative features (*e.g.* Antwerp, S. Jacques, where the apse has a central pier; L'Epine, near Châlons-sur-Marne; Freiburg, Cathedral).

The simple annular vault, although used by the Romans, did not become a popular form of Romanesque ambulatory vaulting, though found in a few churches and crypts. Intersected by expanding tunnel vaults, it did, however, aid in the development of the groined ambulatory vault which was the type most generally employed, either with or without transverse arches, the former being the most advanced form prior to the introduction of ribs. Even the introduction of ribs in most cases changed the structure rather than the form of the vault, the fully developed ribbed vault of trapezoidal plan simply replacing the similar groined vault. Attempts were made to improve upon this vault and to build one more adapted to the ambulatory plan. One method was to divide the ambulatory into alternating squares and triangles and vaulting each of these (*e.g.* Le Mans, Cathedral, outer ambulatory). Another was to place two triangles between squares, while a third consisted in dividing the entire ambulatory into triangles, each vaulted with or without interior ribs. In still other cases, the simple trapezoidal vault is modified by the addition of one or more ribs in the large and awkward outer cell, dividing it into smaller cells like those of a *chevet*. Similar vaults, but with the outer wall broken out so that a niche or veritable chapel is included under them, are also found.

All these methods show the skill with which the mediaeval builder vaulted spaces of unusual shape which his church plan presented. A still further example is to be seen in the church of the Jacobins at Toulouse, where there is a central row of columns and also an apsidal termination.

9. Mr. George W. Elderkin, of the American School of Classical Studies, Athens, *A Ceramic Note on Bacchylides*, XVI, 97. (Read in abstract by Professor Harold N. Fowler, of Western Reserve University.)

To be published.

10. Mr. George W. Elderkin, of the American School of Classical Studies, Athens, *Maeander or Labyrinth: a Comparative Study of the Red-figured Cylices*. (Read in abstract by Professor Harold N. Fowler, of Western Reserve University.)
To be published.

11. Professor Charles R. Morey, of Princeton University, *The Coinage of Bostra*.

The coin types of Bostra in Arabia are largely dominated by the Dusares cult. The representation of Dusares among the Nabatheans, the inhabitants of the district comprised in the province of Arabia, took the form of a baetylion standing on a base at Petra and Adraa, but an anthropomorphic type was used at Bostra. A bronze coin of Commodus in the Princeton collection presents the anthropomorphic Dusares type for the first time and shows that he was assimilated to Dionysus. This coin bears on the reverse the draped bust of a young god, with diadem and long flowing hair, and the inscription: DOVCAPHC BOCTPHNWN. The god standing in a temple on the reverse of a coin of Elagabalus is also Dusares, since he is costumed like Dionysus, and the animal at his feet, though the coin is badly worn, is proved to be a leopard by the appearance of this animal in a replica of the type on a coin of Bostra struck under Etruscilla. The camel on Bostra coins of Antoninus Pius and Commodus has a religious significance and is connected with the cult of Dusares, as is shown by the dedication of two golden camels to Dusares by a Nabathean merchant residing at Puteoli. The figure called "Silenus" by Mionnet and De Sauley, occurring on the reverse of Bostra coins, is the Marsyas type regularly used on city coins to signify the possession of colonial privileges. The appearance of the "colonus type" and a Latin inscription on a coin of Elagabalus show that Bostra became a Roman colony in his reign and not under Alexander Severus, as was hitherto supposed. Dussaud's objection to the "winepress type" is not to be considered. The Ammon type was introduced into Bostra coinage by the *III Legio Cyrenaica*, whose former quarters were at Cyrene, the centre of Ammon worship. Dussaud's theory that the anthropomorphic type of Dusares took the form of Ammon is disproved by the appearance of the real Dusares type on the Princeton coin. This Dusares type may be identical with that on the reverse of coins of Nabathean kings, hitherto explained as a royal head. The "Astarte" type is the usual city Tyche.

Other papers read by title were :

Professor George H. Chase, of Harvard University, *A Bronze Cista belonging to James Loeb, Esq.* ; Professor Paul V. C. Baur, of Yale University, *Some New Centaurs* ; Mr. John P. Harrington, of the School of American Archaeology, *The Language of the Tano Indians of New Mexico* ; Mr. Sylvanus C. Morley, of the School of American Archaeology, *The Correlation of Maya and Christian Chronology* (to be published in the JOURNAL) ; Professor Mitchell Carroll, of George Washington University, *Carl Robert and the Purpose of Pausanias' Description of Greece* ; Professor James H. Breasted, of the University of Chicago, *The Pyramids of Meroë* ; Professor John C. Rolfe, of the University of Pennsylvania, *The Connection of Mirrors with Burial* ; Professor A. L. Frothingham, of Princeton, *How not to date Roman Sarcophagi* ; and *Contributions to the Study of the Roman Pomerium*.

The next general meeting is to be held at Brown University, Providence, Rhode Island, during the Christmas holidays of 1910. The American Philological Association will meet at the same time and place.